Method for the manufacture of 3,4'-diaminodiphenyl ether

Description of Technology: A method of dehydrogenating 3-amino-2-cyclohexene-1-one with a supported palladium or palladium-platinum catalyst in a solvent in the presence of base to produce 3-aminophenol and its use directly without purification to produce 3,4'-oxydianiline.

Patent Listing:

1. **US Patent No. 5,434,308**, Issued July 18, 1995, "Method for the manufacture of 3,4'-diaminodiphenyl ether"
   http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F5434308

Market Potential: 3-Aminophenol has been prepared by treating resorcinol with ammonia under pressure, or fusion of metanilic acid with sodium hydroxide at elevated temperatures. Resorcinol is obtained commercially by a complicated sulfonation-caustic fusion process. The above processes require either pressure reactors or use highly corrosive chemicals at elevated temperatures and are laborious. Disposal of the excess reactants and solvents requires expensive cleanup of the waste water streams.

The invention relates to a method for manufacturing 3-aminophenol from 3-amino-2-cyclohexene-1-one by dehydrogenation in the presence of a supported palladium catalyst in a solvent and introducing an amount of base which significantly increases the yield of 3-aminophenol, while requiring much less solvent and catalyst to effect the reaction, thus making the process very attractive from a commercial viewpoint. When the solvent is a tertiary amide the reaction mass, after removal of the catalyst, may be used directly for the synthesis of 3-aminodiphenyl ethers.

Benefits:

- Easier to produce than in methods of previous arts
- Less expensive and hazardous chemical cleanup

Applications:

- Production of 3-Aminophenol

Contact: Ken Anderson
Director, Entrepreneurial & Small Business Support, Delaware Economic Development Office (DEDO)
Carvel State Building, 820 French Street, Wilmington, DE, 19801
Phone: (302) 577-8496, Fax: (302) 577-8499, Email: Kenneth.R.Anderson@state.de.us